

JOURNAL OF STATISTICAL PHYSICS, Volume 23, 1980

The *Journal of Statistical Physics* accepts original and review papers in the fields of statistical mechanics and thermodynamics of equilibrium and nonequilibrium processes. Papers on plasma physics, nonlinear dynamics, biology, stochastic processes, fluid dynamics, and chemical physics are also accepted provided they are of general interest in relating macroscopic behavior to microscopic interactions.

The general criteria for contributions are as follows. Papers should present important new results, and review papers should provide new insights. Clarity of presentation is important in all cases but, in many cases, particularly for review papers, it is the decisive criterion for publication. Each paper should be written in such a way that a clear understanding of the problem and of the results can be obtained from the abstract and introduction. Given that a paper meets these criteria, shorter papers are greatly preferred to longer ones. In summary, the journal publishes papers with important new results or insights written clearly and concisely.

The journal also accepts communications in the following departments: news of meetings, questions and answers, book reviews, and letters to the editor.

EDITOR-IN-CHIEF

Joel L. Lebowitz, Department of Mathematics, Rutgers University, New Brunswick, New Jersey

EDITORIAL BOARD

G. Baker, Los Alamos Scientific Laboratory, Los Alamos, New Mexico

Kurt Binder, Institut für Festkörperforschung, Jülich, West Germany

John Cahn, National Bureau of Standards, Washington, D.C.

P. Choquard, Laboratoire de Physique Theorique, Lausanne, Switzerland

C. de Dominicis, Saclay, Gif-sur-Yvette, France

R. Dorfman, University of Maryland, College Park, Maryland

Michael Fisher, Cornell University, Ithaca, New York

Jürg Fröhlich, Institute des Hautes Etudes Scientifiques, Bures-sur-Yvette, France

William Gelbart, University of California, Los Angeles, California

B. Jancovici, Université de Paris XI, Orsay, France

K. Kawasaki, Kyushu University, Fukuoka, Japan

Oscar Lanford, University of California, Berkeley, California

James Langer, Carnegie-Mellon University, Pittsburgh, Pennsylvania

Irwin Oppenheim, Massachusetts Institute of Technology, Cambridge, Massachusetts

Howard Reiss, University of California, Los Angeles, California

S. Rice, University of Chicago, Chicago, Illinois

Barry Simon, Princeton University, Princeton, New Jersey

Y. Sinai, Landau Institute for Theoretical Physics, Moscow, USSR

M. Suzuki, University of Tokyo, Tokyo, Japan

Colin Thompson, University of Melbourne, Parkville, Australia

N. van Kampen, Institute voor Theoretische Fysica, Utrecht, The Netherlands

George H. Weiss, National Institutes of Health, Bethesda, Maryland

BOOK REVIEW EDITOR

George H. Weiss, National Institutes of Health, Bethesda, Maryland

Journal of Statistical Physics is published monthly by Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. Subscription orders should be addressed to the publisher. *Journal of Statistical Physics* is abstracted or indexed in Applied Mechanics Reviews, Current Contents, Energy Research Abstracts, Engineering Index, INSPEC-Physics Abstracts, Mathematical Reviews, Referativnyi Zhurnal, and Science Citation Index. © 1980 Plenum Publishing Corporation. *Journal of Statistical Physics* participates in the program of Copyright Clearance Center, Inc. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on the condition that the copier pay the stated per-copy fee through the Copyright Clearance Center, Inc. for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. It does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts.

Subscription rates:

Volumes 22 and 23, 1980 (6 issues each) \$122.50 per volume (outside the U.S., \$138.00 per volume).

Volumes 24, 25, and 26, 1981 (4 issues each) \$130.00 per volume (outside the U.S., \$145.00 per volume).

Second-class postage paid at New York, N.Y., and at additional mailing offices.

Printed in USA.

Journal of Statistical Physics is published monthly by Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. Subscription orders should be addressed to the publisher. *Journal of Statistical Physics* is abstracted or indexed in Applied Mechanics Reviews, Current Contents, Energy Research Abstracts, Engineering Index, INSPEC—Physics Abstracts, Mathematical Reviews, Referativnyi Zhurnal, and Science Citation Index. © 1980 Plenum Publishing Corporation. *Journal of Statistical Physics* participates in the program of Copyright Clearance Center, Inc. The appearance of a code line at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use. However, this consent is given on the condition that the copier pay the stated per-copy fee through the Copyright Clearance Center, Inc. for all copying not explicitly permitted by Sections 107 or 108 of the U.S. Copyright Law. It does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale, nor to the reprinting of figures, tables, and text excerpts.

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 1

July 1980

CONTENTS

ARTICLES

- Circle Theorem for Hard-Core Binary Lattice Gases 1
L. K. Runnels and J. L. Lebowitz
- Lattice Random Walks for Sets of Random Walkers. First Passage Times 11
Katja Lindenberg, V. Seshadri, K. E. Shuler, and George H. Weiss
- Discovery of Closed Orbits of Dynamical Systems with the Use of Computers 27
Ja. G. Sinai and E. B. Vul
- Field-Theoretic Approach to Second-Order Phase Transitions in Two- and Three-Dimensional Systems 49
Giorgio Parisi
- Microscopic Modes in a Fermi Superfluid. I. Linearized Kinetic Equations 83
L. E. Reichl
- Microscopic Modes in a Fermi Superfluid. II. Dispersion Relations 111
L. E. Reichl

DEPARTMENT

- Book Review: *The Maximum Entropy Formalism* 127
Irwin Oppenheim
- Future Contributions to *Journal of Statistical Physics* 129
-

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 2

August 1980

CONTENTS

ARTICLES

Complex Free Energies and Metastable Lifetimes <i>C. M. Newman and L. S. Schulman</i>	131
On the Krook-Wu Model of the Boltzmann Equation <i>H. Cornille</i>	149
Solutions of the Boltzmann Equation for Maxwell Interactions and Singular Angle-Dependent Cross Sections <i>H. Cornille and A. Gervois</i>	167
Phase Transition for Ising Frustration Potentials <i>A. Sütő</i>	203
Simple Cell Model with Collapse Instability <i>F. H. Stillinger</i>	219
Joint Diffusion on the Line <i>Domokos Szász</i>	231
Kinetics of Polymerization <i>Robert M. Ziff</i>	241
Future Contributions to <i>Journal of Statistical Physics</i>	265

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 3

September 1980

CONTENTS

ARTICLES

- Lower Bounds on the Cluster Size Distribution 267
Michael Aizenman, François Delyon, and Bernard Souillard
- Nonequilibrium Thermodynamics of Lasing and Bistable Optical Systems 281
H. Hasegawa, T. Nakagomi, M. Mabuchi, and K. Kondo
- Nonconcavity of the Magnetization in Ising Ferromagnets 315
James L. Monroe
- Trajectory Divergence for Coupled Relaxation Oscillators. Measurements and Models 321
J. P. Gollub, E. J. Romer, and J. E. Socolar
- Kinetic Theory of Hydrodynamic Flows. I. The Generalized Normal Solution Method and Its Application to the Drag on a Sphere 335
Henk van Beijeren and J. R. Dorfman
- Future Contributions to *Journal of Statistical Physics* 403
-

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 4

October 1980

CONTENTS

ARTICLES

- On the Equation of State of Classical One-Component Systems with
Long-Range Forces 405
Ph. Choquard, P. Favre, and Ch. Gruber
- Kinetic Theory of Hydrodynamic Flows. II. The Drag on a Sphere
and on a Cylinder 443
Henk van Beijeren and J. R. Dorfman
- Fluctuating Hydrodynamic Equations of Mixed and of Chemically
Reacting Gases 463
Hiroshi Ueyama
- Coding of Gibbs Function Flows from Nucleotide Pools 483
Alexandr Křemen
- Statistical Thermodynamics of the Formation of a New Phase in the
Boiling Up of Volatile Liquids 495
B. V. Derjaguin, A. V. Prokhorov, and N. N. Tunitskij
- Iterations of Transformations on the Unit Interval: Approach to a
Periodic Attractor 521
Jean Coste
- Future Contributions to *Journal of Statistical Physics* 537
-

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 5

November 1980

CONTENTS

ARTICLES

- Response Function Theory for Far-from-Equilibrium Statistical Systems 539
Roberto Luzzi and Aurea R. Vasconcellos
- Asymptotic Distributions for Self-Avoiding Walks Constrained to Strips, Cylinders, and Tubes 561
Douglas J. Klein
- Differential Renormalization of van der Waals Spin Models 587
Raf Dekeyser and Attilio Stella
- Differential Real-Space Renormalization of the d -Dimensional Gaussian Model 609
Yoshitake Yamazaki, Henk J. Hilhorst, and Günther Meissner
- Correlation Functions of Odd Numbers of Spins with Finite Separations on the Onsager-Ising Lattice 627
Scott R. Chubb and David Fox
- On the Characterization of the Stationary State of a Class of Dynamical Semigroups 639
Hiroshi Hasegawa and Teruaki Nakagomi
- Future Contributions to *Journal of Statistical Physics* 653
-

JOURNAL OF STATISTICAL PHYSICS

Vol. 23, No. 6

December 1980

CONTENTS

ARTICLES

- Shielded Distribution Approximation for a Wall-Bounded Classical
Fluid 657
J. K. Percus
- Correlation Inequalities and the Thermodynamic Limit for Classical
and Quantum Continuous Systems. II. Bose-Einstein
and Fermi-Dirac Statistics 701
Jürg Fröhlich and Yong Moon Park
- Equal-Time Second-Order Moments of a Harmonic Oscillator with
Stochastic Frequency and Driving Force 755
Katja Lindenberg, V. Seshadri, K. E. Shuler, and Bruce J. West
- Canonical Ensemble and Nonequilibrium States by Molecular
Dynamics 767
G. Ciccotti and A. Tenenbaum
- Exact Results for a Dilute Potts Model 773
F. Y. Wu
- Future Contributions to *Journal of Statistical Physics* 783
-